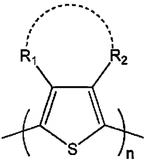
AMENDMENTS TO THE CLAIMS

1. (Currently amended) A fabrication method of a photoelectric conversion device comprising a semiconductor electrode and a metal film to be an opposite electrode formed on a metal oxide film, wherein the method includes steps of forming an intermediate film comprising at least one compound selected from polythiophene defined by the following Formula 1 and its derivatives as well as polystyrenesulfonic acid defined by the following Formula 2, RSO_3H (R = an alkyl, an aryl or an alkoxy), $R'OSO_3H$ (R' = H, an alkyl, an aryl or an alkoxy), HCl, $HClO_4$, HPF_6, HBF_4, and HI_5 on the metal oxide film, the metal oxide film directly contacting the intermediate film, and forming the metal film on the intermediate film, the metal film directly contacting the intermediate film and the metal film being non-porous and less than 100 nm in thickness:

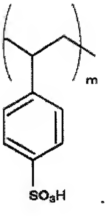
[Formula 1]



R_1, R_2 = H, an alkyl, an aryl or an alkoxy

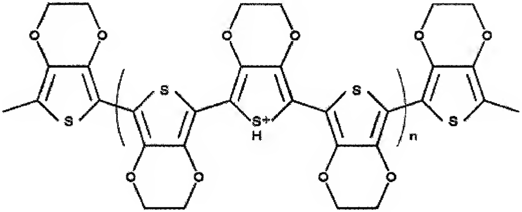
 = a cyclic structure

[Formula 2]

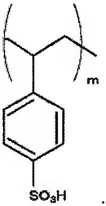


2. (Original) The fabrication method of a photoelectric conversion device as claimed in claim 1, wherein the intermediate film is composed of polyethylene dioxythiophene defined by the following Formula 3 and polystyrenesulfonic acid defined by the following Formula 4:

[Formula 3]

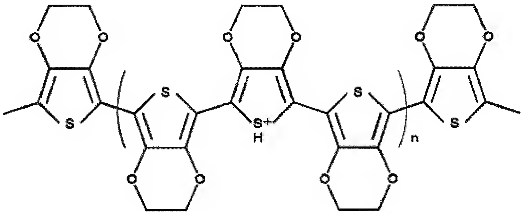


[Formula 4]

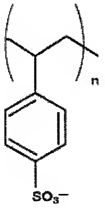


3. (Original) The fabrication method of a photoelectric conversion device as claimed in claim 1, wherein the intermediate film is formed by using an aqueous solution containing polyethylene dioxythiophene defined by the following Formula 5, polystyrenesulfonic acid ion defined by the following Formula 6, and polystyrenesulfonic acid defined by the following Formula 7:

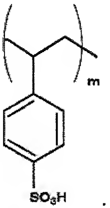
[Formula 5]



[Formula 6]



[Formula 7]



4. (Original) The fabrication method of a photoelectric conversion device as claimed in claim 1, wherein metal oxide film is made of at least one metal oxide selected from In-Sn oxide, SnO_2, TiO_2, and ZnO.

5. (Original) The fabrication method of a photoelectric conversion device as claimed in claim 1, wherein the metal film is made of at least one metal selected from platinum, gold, aluminum, copper, silver and titanium.

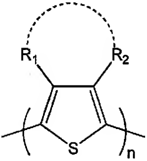
6. (Original) The fabrication method of a photoelectric conversion device as claimed in claim 1, wherein the metal film is a monolayer film or a multilayer film made of at least one metal selected from platinum, gold, aluminum, copper, silver and titanium.

7. (Previously presented) The fabrication method of a photoelectric conversion device as claimed in claim 1, wherein the semiconductor electrode is composed of semiconductor fine particles, the semiconductor fine particles having an average particle diameter of primary particles ranging between approximately 1 nm to approximately 200 nm.

8. (Original) The fabrication method of a photoelectric conversion device as claimed in claim 1, wherein the photoelectric conversion device is a wet type solar cell.

9. (Currently amended) A photoelectric conversion device comprising a semiconductor electrode and a metal film to be an opposite electrode formed on a metal oxide film, wherein an intermediate film comprising at least one compound selected from polythiophene defined by the following Formula 8 and its derivatives as well as polystyrenesulfonic acid defined by the following Formula 9, RSO_3H (R = an alkyl, an aryl or an alkoxy), $R'OSO_3H$ (R' = H, an alkyl, an aryl or an alkoxy), HCl, $HClO_4$, HPF_6, HBF_4, and HI_5 is formed on the metal oxide film, the metal oxide film directly contacting the intermediate film, and the metal film is formed on the intermediate film, the metal film directly contacting the intermediate film and the metal film being non-porous and less than 100 nm in thickness:

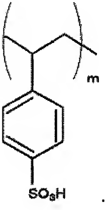
[Formula 8]



R_1, R_2 = H, an alkyl, an aryl or an alkoxy

 = a cyclic structure

[Formula 9]



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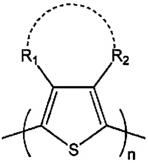
10. (Currently amended) A manufacturing method of an electronic apparatus comprising a metal film formed on a metal oxide film wherein the method includes steps of forming an intermediate film comprising at least one compound selected from polythiophene defined by the following Formula 10 and its derivatives as well as polystyrenesulfonic acid defined by the following Formula 11, RSO_3H (R = an alkyl, an aryl or an alkoxy), $R'OSO_3H$ (R' = H, an alkyl, an aryl or an alkoxy), HCl, $HClO_4$, HPF_6, HBF_4, and HI_5 on the metal oxide film, the metal oxide film directly contacting the intermediate film, and forming the metal film on the intermediate film, the metal film directly contacting the intermediate film and the metal film being non-porous and less than 100 nm in thickness:

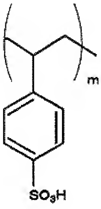
[Formula 10]



R_1, R_2 = H, an alkyl, an aryl or an alkoxy

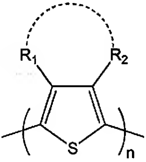
 = a cyclic structure

[Formula 11]



11. (Currently amended) An electronic apparatus comprising a metal film formed on a metal oxide film wherein an intermediate film comprising at least one compound selected from polythiophene defined by the following Formula 12 and its derivatives as well as polystyrenesulfonic acid defined by the following Formula 13, RSO_3H (R = an alkyl, an aryl or an alkoxy), $R'OSO_3H$ (R' = H, an alkyl, an aryl or an alkoxy), HCl, $HClO_4$, HPF_6, HBF_4, and HI_5 is formed on the metal oxide film, the metal oxide film directly contacting the intermediate film, and the metal film is formed on the intermediate film, the metal film directly contacting the intermediate film and the metal film being non-porous and less than 100 nm in thickness:

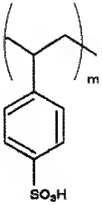
[Formula 12]



R_1, R_2 = H, an alkyl, an aryl or an alkoxy

= a cyclic structure

[Formula 13]



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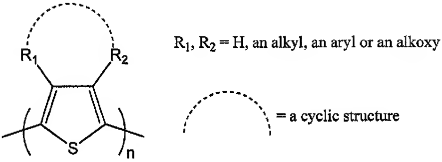
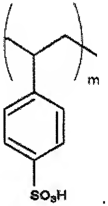
12. (Currently amended) A metal film formation method for forming a metal film on a metal oxide film, wherein the method includes steps of forming an intermediate film comprising at least one compound selected from polythiophene defined by the following Formula 14 and its derivatives as well as polystyrenesulfonic acid defined by the following Formula 15, RSO_3H (R = an alkyl, an aryl or an alkoxy), $R'OSO_3H$ (R' = H, an alkyl, an aryl or an alkoxy), HCl, $HClO_4$, HPF_6, HBF_4, and HI_5 on the metal oxide film, the metal oxide film directly contacting the intermediate film, and forming the metal film on the intermediate film, the metal film directly contacting the intermediate film and the metal film being non-porous and less than 100 nm in thickness:

[Formula 14]



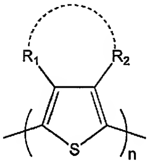
[Formula 15]



13. (Currently amended) A layer structure comprising a metal film formed on a metal oxide film, wherein an intermediate film comprising at least one compound selected from polythiophene

defined by the following Formula 16 and its derivatives as well as polystyrenesulfonic acid defined by the following Formula 17, RSO_3H (R = an alkyl, an aryl or an alkoxy), $R'OSO_3H$ (R' = H, an alkyl, an aryl or an alkoxy), HCl, $HClO_4$, HPF_6, HBF_4, and HI_5 is formed on the metal oxide film, the metal oxide film directly contacting the intermediate film, and the metal film on the intermediate film, the metal film directly contacting the intermediate film and the metal film being non-porous and less than 100 nm in thickness:

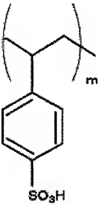
[Formula 16]



R_1, R_2 = H, an alkyl, an aryl or an alkoxy

 = a cyclic structure

[Formula 17]

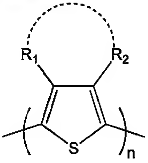


14. (Currently amended) A fabrication method of a photoelectric conversion device comprising a semiconductor electrode composed of semiconductor fine particles on a first metal oxide film, the semiconductor fine particles having an average particle diameter of primary particles ranging between approximately 1 nm to approximately 200 nm, wherein the method includes steps

of forming ~~an~~ a first intermediate film comprising at least one compound selected from polythiophene defined by the following Formula 18 and its derivatives as well as polystyrenesulfonic acid defined by the following Formula 19, RSO_3H (R = an alkyl, an aryl or an alkoxy), $R'OSO_3H$ (R' = H, an alkyl, an aryl or an alkoxy), HCl, $HClO_4$, HPF_6, HBF_4, and HI_5 on the first metal oxide film and forming the semiconductor electrode on the first intermediate film, the semiconductor electrode directly contacting the first intermediate film; and

forming an opposite electrode associated with the semiconductor electrode, the opposite electrode having a second intermediate film comprising at least one compound selected from polythiophene defined by the following Formula 18 and its derivatives as well as polystyrenesulfonic acid defined by the following Formula 19, RSO_3H (R = an alkyl, an aryl or an alkoxy), $R'OSO_3H$ (R' = H, an alkyl, an aryl or an alkoxy), HCl, $HClO_4$, HPF_6, HBF_4, and HI_5 on a second metal oxide film, the second intermediate film directly contacting the second metal oxide film and the second intermediate film directly contacting a metal film, the metal film being non-porous and less than 100 nm in thickness:

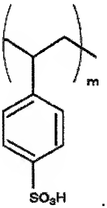
[Formula 18]



R_1, R_2 = H, an alkyl, an aryl or an alkoxy

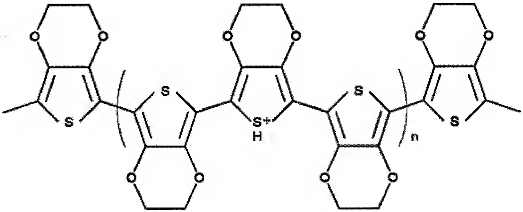
 = a cyclic structure

[Formula 19]

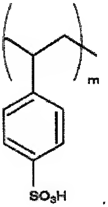


15. (Original) The fabrication method of a photoelectric conversion device as claimed in claim 14, wherein the intermediate film is composed of polyethylene dioxythiophene defined by the following Formula 20 and polystyrenesulfonic acid defined by the following Formula 21:

[Formula 20]

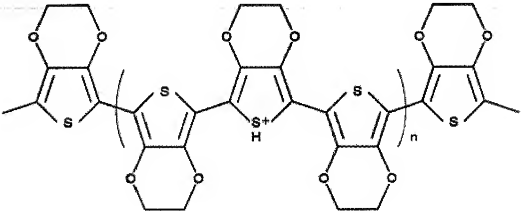


[Formula 21]

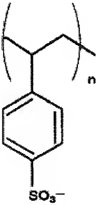


16. (Original) The fabrication method of a photoelectric conversion device as claimed in claim 14, wherein the intermediate film is formed by using an aqueous solution containing polyethylene dioxythiophene defined by the following Formula 22, polystyrenesulfonic acid ion defined by the following Formula 23, and polystyrenesulfonic acid defined by the following Formula 24:

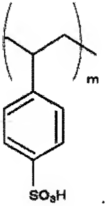
[Formula 22]



[Formula 23]



[Formula 24]



17. (Currently amended) The fabrication method of a photoelectric conversion device as claimed in claim 14, wherein <u>the first</u> metal oxide film is made of at least one metal oxide selected from In-Sn oxide, SnO_2, TiO_2, and ZnO.

18. (Currently amended) The fabrication method of a photoelectric conversion device as claimed in claim 14, wherein the <u>first</u> metal oxide film is formed on a transparent plastic substrate.

19. (Previously presented) The fabrication method of a photoelectric conversion device as claimed in claim 14, wherein the semiconductor electrode is formed by using an acidic semiconductor fine particle dispersion.

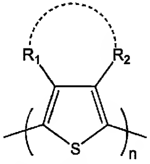
20. (Original) The fabrication method of a photoelectric conversion device as claimed in claim 14, wherein the semiconductor electrode is formed at a temperature not lower than 100°C and not higher than 140°C.

21. (Original) The fabrication method of a photoelectric conversion device as claimed in claim 14, wherein the photoelectric conversion device is a wet type solar cell.

22. (Currently amended) A photoelectric conversion device comprising a semiconductor electrode composed of semiconductor fine particles on a first metal oxide film, the semiconductor fine particles having an average particle diameter of primary particles ranging between approximately 1 nm to approximately 200 nm, wherein a first intermediate film comprising at least one compound selected from polythiophene defined by the following Formula 25 and its derivatives as well as polystyrenesulfonic acid defined by the following Formula 26, RSO_3H (R = an alkyl, an aryl or an alkoxy), $R'OSO_3H$ (R' = H, an alkyl, an aryl or an alkoxy), HCl, $HClO_4$, HPF_6, HBF_4, and HI_5 is formed on the first metal oxide film and the semiconductor electrode is formed on the first intermediate film, the semiconductor electrode directly contacting the first intermediate film; and

forming an opposite electrode associated with the semiconductor electrode, the opposite electrode having a second intermediate film comprising at least one compound selected from polythiophene defined by the following Formula 25 and its derivatives as well as polystyrenesulfonic acid defined by the following Formula 26, RSO_3H (R = an alkyl, an aryl or an alkoxy), $R'OSO_3H$ (R' = H, an alkyl, an aryl or an alkoxy), HCl, $HClO_4$, HPF_6, HBF_4, and HI_5 on a second metal oxide film, the second intermediate film directly contacting the second metal oxide film and the second intermediate film directly contacting a metal film, the metal film being non-porous and less than 100 nm in thickness:

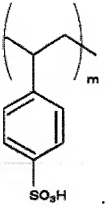
[Formula 25]



R_1, R_2 = H, an alkyl, an aryl or an alkoxy

 = a cyclic structure

[Formula 26]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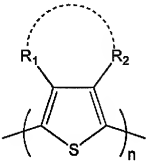
23. (Currently amended) A manufacturing method of an electronic apparatus comprising a semiconductor electrode composed of semiconductor fine particles on a first metal oxide film, the semiconductor fine particles having an average particle diameter of primary particles ranging between approximately 1 nm to approximately 200 nm, wherein the method includes steps of forming a first intermediate film comprising at least one compound selected from polythiophene defined by the following Formula 27 and its derivatives as well as polystyrenesulfonic acid defined by the following Formula 28, RSO_3H (R = an alkyl, an aryl or an alkoxy), $R'OSO_3H$ (R' = H, an alkyl, an aryl or an alkoxy), HCl, $HClO_4$, HPF_6, HBF_4, and HI_5 on the first metal oxide film and forming the semiconductor electrode on the first intermediate film, the semiconductor electrode directly contacting the first intermediate film; and

forming an opposite electrode associated with the semiconductor electrode, the opposite electrode having a second intermediate film comprising at least one compound selected from

polythiophene defined by the following Formula 27 and its derivatives as well as polystyrenesulfonic acid defined by the following Formula 28, RSO_3H (R = an alkyl, an aryl or an alkoxy), $R'OSO_3H$ (R' = H, an alkyl, an aryl or an alkoxy), HCl, $HClO_4$, HPF_6, HBF_4, and HI_5 on a second metal oxide film, the second intermediate film directly contacting the second metal oxide film and the second intermediate film directly contacting a metal film<u>, the metal film being non-porous and less than 100 nm in thickness</u>;

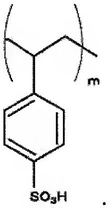
[Formula 27]



R_1, R_2 = H, an alkyl, an aryl or an alkoxy

 = a cyclic structure

[Formula 28]

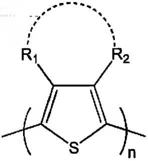


24. (Currently amended) An electronic apparatus comprising a semiconductor electrode composed of semiconductor fine particles on a first metal oxide film wherein a first intermediate film comprising at least one compound selected from polythiophene defined by the following Formula 29 and its derivatives as well as polystyrenesulfonic acid defined by the following Formula

30, RSO_3H (R = an alkyl, an aryl or an alkoxy), R'OSO_3H (R' = H, an alkyl, an aryl or an alkoxy), HCl, $HClO_4$, HPF_6, HBF_4, and HI_5 is formed on the first metal oxide film and the semiconductor electrode is formed on the first intermediate film, the semiconductor electrode directly contacting the first intermediate film; and

forming an opposite electrode associated with the semiconductor electrode, the opposite electrode having a second intermediate film comprising at least one compound selected from polythiophene defined by the following Formula 29 and its derivatives as well as polystyrenesulfonic acid defined by the following Formula 30, RSO_3H (R = an alkyl, an aryl or an alkoxy), R'OSO_3H (R' = H, an alkyl, an aryl or an alkoxy), HCl, $HClO_4$, HPF_6, HBF_4, and HI_5 on a second metal oxide film, the second intermediate film directly contacting the second metal oxide film and the second intermediate film directly contacting a metal film, the metal film being non-porous and less than 100 nm in thickness:

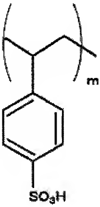
[Formula 29]



R_1, R_2 = H, an alkyl, an aryl or an alkoxy

 = a cyclic structure

[Formula 30]



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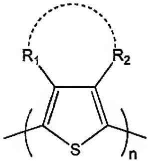
25. (Currently amended) A semiconductor fine particle layer formation method for forming a semiconductor fine particle layer on a first metal oxide film wherein the method includes steps of forming a first intermediate film comprising at least one compound selected from polythiophene defined by the following Formula 31 and its derivatives as well as polystyrenesulfonic acid defined by the following Formula 32, RSO_3H (R = an alkyl, an aryl or an alkoxy), $R'OSO_3H$ (R' = H, an alkyl, an aryl or an alkoxy), HCl, $HClO_4$, HPF_6, HBF_4, and HI_5 on the first metal oxide film and forming the semiconductor fine particle layer on the first intermediate film, the semiconductor fine particle layer directly contacting the first intermediate film; and

forming an electrode associated with the semiconductor fine particle layer, the electrode having a second intermediate film comprising at least one compound selected from polythiophene defined by the following Formula 31 and its derivatives as well as polystyrenesulfonic acid defined by the following Formula 32, RSO_3H (R = an alkyl, an aryl or an alkoxy), $R'OSO_3H$ (R' = H, an alkyl, an aryl or an alkoxy), HCl, $HClO_4$, HPF_6, HBF_4, and HI_5 on a second metal oxide film, the second intermediate film directly contacting the second metal oxide film and the second intermediate film directly contacting a metal film, the metal film being non-porous and less than 100 nm in thickness:

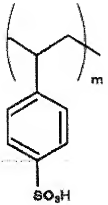
[Formula 31]



R_1, R_2 = H, an alkyl, an aryl or an alkoxy

 = a cyclic structure

[Formula 32]

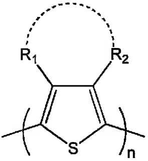


26. (Currently amended) A layer structure comprising a semiconductor fine particle layer on a first metal oxide film wherein a first intermediate film comprising at least one compound selected from polythiophene defined by the following Formula 33 and its derivatives as well as polystyrenesulfonic acid defined by the following Formula 34, RSO_3H (R = an alkyl, an aryl or an alkoxy), $R'OSO_3H$ (R' = H, an alkyl, an aryl or an alkoxy), HCl, $HClO_4$, HPF_6, HBF_4, and HI_5 is formed on the first metal oxide film and the semiconductor fine particle layer is formed on the first intermediate film, the semiconductor fine particle layer directly contacting the intermediate film; and

forming an electrode associated with the semiconductor fine particle layer, the electrode having a second intermediate film comprising at least one compound selected from polythiophene defined by the following Formula 33 and its derivatives as well as polystyrenesulfonic acid defined by the following Formula 34, RSO_3H (R = an alkyl, an aryl or an alkoxy), $R'OSO_3H$ (R' = H, an

alkyl, an aryl or an alkoxy), HCl, $HClO_4$, HPF_6, HBF_4, and HI_5 on a second metal oxide film, the second intermediate film directly contacting the second metal oxide film and the second intermediate film directly contacting a metal film, the metal film being non-porous and less than 100 nm in thickness:

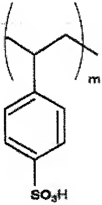
[Formula 33]



R_1, R_2 = H, an alkyl, an aryl or an alkoxy

 = a cyclic structure

[Formula 34]



27. (Original) The fabrication method of claim 1, further comprising injecting an electrolytic layer between the metal film and a semiconductor fine particle layer.

28. (Original) The photoelectric conversion device of claim 9, further comprising an electrolytic layer disposed between the metal film and a semiconductor fine particle layer.

29. (Previously presented) The fabrication method of claim 14, further comprising injecting an electrolytic layer between the metal film and the semiconductor electrode.

30. (Previously presented) The photoelectric conversion device of claim 22, further comprising an electrolytic layer disposed between the metal film and the semiconductor electrode.

31. (Previously presented) The semiconductor fine particle layer formation method of claim 25, further comprising injecting an electrolytic layer between the metal film and the semiconductor fine particle layer.

32. (Previously presented) The fabrication method of claim 1, further comprising forming the semiconductor electrode and the opposite electrode separately from one another.

33. (Previously presented) The photoelectric conversion device of claim 9, wherein the semiconductor electrode and the opposite electrode are formed separately from one another.

34. (Previously presented) The fabrication method of claim 14, further comprising forming the semiconductor electrode and the opposite electrode separately from one another.

35. (Previously presented) The photoelectric conversion device of claim 22, wherein the semiconductor electrode and the opposite electrode are formed separately from one another.

36. (Previously presented) The semiconductor fine particle layer formation method of claim 25, further comprising forming the semiconductor fine particle layer and the electrode separately from one another.